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Digitizing Lantern Slides in the Warren H. Manning Collection

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Warren H. Manning (1860-1938) was a pivotal figure in the history of American landscape architecture and a co-founder of the American Society of Landscape Architects. He developed an environmental planning model based on the concept of gathering and organizing discrete types of environmental data, such as soils and vegetative cover, in mapped form. This evolved into Manning's National Plan, a document representing an early attempt at providing a statistical profile of the entire country and a land classification system that could be used by the government to control the exploitation of natural resources and to evaluate scenic beauty. The Manning collection at the Iowa State University Library Special Collections includes, among other things, many black and white lantern slides along with a few color slides that have been scanned to preserve their fragile images and to make them more widely accessible. Nearly 1,700 images of botanical specimens, landscape drawings, and examples of gardens, cityscapes, and natural landscapes are represented.

Lantern slides are scanned differently from other items in a few ways. Since they are transparencies and it is not always immediately obvious which side is the front due to subject matter or lack of labeling, some examination of the slides is necessary to present the image properly and not backwards. For this collection, trusting the creator's labeling practices is not always a guarantee. Looking for words on signs or being familiar with a landscape or building were helpful in determining proper orientation.

Since the slides are only 3 x 4 inches and the images on them are sometimes much smaller, they were scanned at a very high resolution (1600ppi) so that all the details show when the image is viewed

Figure 1. Coachman's Cottage (Iowa State University Special Collections)

Figure 2. School Gardens near Smithsonian Institution (Iowa State University Special Collections)

on a standard computer screen. This also allows for the ability to zoom in for greater detail. The images were cropped leaving the black tape border and mat around them to preserve the look of the original and to show that the scanned image actually came from a lantern slide. Since this group of slides was collected by Manning over a long period of time and from different sources, there was a wide variety of quality in the images and therefore the contrast and brightness had to be adjusted quite a bit in some slides in order to see the images in what would be the most realistic way possible.

Structurally, lantern slides are layered like photographs. They are composed of a glass support layer, with an image-forming material (usually silver particles) embedded in an emulsion layer that has been adhered to one side of the glass. A second sheet of glass is laid over the emulsion layer and attached to the lantern slide by wrapping the edges with binding tape. This structure is unlike glass plate negatives that maintain a vulnerable, exposed emulsion side.

Other than breakage of the glass support, the most common type of deterioration for lantern slides is loss of the emulsion layer. This damage can be caused by poor handling of the slides, or by storage in environmentally unstable conditions. Natural skin oils can leave marring fingerprints on the glass, and rough handling can cause abrasions to the image surface. As the relative humidity of the environment fluctuates, the emulsion layer can swell and contract in response. This swelling and contracting can then result in the emulsion peeling or flaking away from the glass support. Since the emulsion layer is what binds the image-forming particles to the glass, loss of emulsion means loss of image.

Prior to scanning, the lantern slides were assessed for damage and care was taken to make sure all lantern slides were assembled correctly. On occasion, slides have been assembled or reassembled with the emulsion exposed. In those instances, the paper tape

Figure 3. Amelanchier Canadensis (Iowa State University Special Collections)

Figure 4. McCormick Carriage Turn Before Planting (Iowa State University Special Collections)

Figure 5. New England Town Street (Iowa State University Special Collections)

was removed, the glass plate was reversed to protect the image, and then paper tape was reapplied. All slides were then cleaned with a dry, soft, lint-free cloth. Solvents and water were avoided because of the potential damage these liquids can cause. The solvents could easily seep under the paper tape and become trapped between the glass layers and either chemically react with the silver particles or the emulsion layer, or at the very least affect the moisture content and encourage mold growth. In fact, a slide was discovered in the collections that had been cleaned previously and part of the image had been wiped away. If we had a photographs conservator on staff, we may have done things differently; however, this collection was in good condition.

Now that these slides have been scanned there is less need to bring them out, reducing the risk of breaking, scratching, and exposure to environmental change. The scanned images are much easier to use and can show more detail with zoom capabilities than the lantern slides themselves, especially without a lantern slide projector.

Access the Warren H. Manning Collection at http://www.lib.iastate.edu/spcl/LDC/manning/manning.html.